

### Research Note

## Some Acanthocephala and Digenea of Marine Fish from Grand Cayman, Cayman Islands, British West Indies

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**ABSTRACT:** A survey of 17 fishes belonging to 11 species from Grand Cayman, Cayman Islands, West Indies, led to the recovery of 2 species of acanthocephalans and 9 of digeneans. The acanthocephalans found were *Acanthogyrus (Acanthosentis) acanthuri* and *Dollfusentis ctenorhynchus*. The digeneans included *Monorchimacradena acanthuri* in *Acanthurus bahianus* (new host record), *Bucephalus varicus*, *Hurleytremaoides chaetodonti*, *Hurleytremaoides curacaensis*, *Multitestis chaetodonti*, *Lecithophyllum pyriforme*, *Stephanostomum sentum*, *Podocotyle oscitans*, and *Helicometra equilata* in *Holocentrus marianus* (new host record).

**KEY WORDS:** Acanthocephala, Digenea, marine fish, Grand Cayman, West Indies.

During a short research trip in summer (19 July–3 August) of 1991, 17 fishes belonging to 11 species were captured using traps and angling and examined for parasites. To the best of my knowledge, this is the first report of parasites of fish from Grand Cayman. Two species of acanthocephalans and 9 species of digeneans were recovered. After washing the parasites in 0.7% saline, they were processed as follows: the acanthocephalans were transferred to a dish containing tap water and placed overnight in a refrigerator to allow protrusion of the proboscis. The following day, the water was removed and quickly replaced with hot alcohol–formalin–acetic acid (AFA). The digenetic trematodes were studied alive under slight coverslip pressure and then fixed with cold AFA. Both groups of parasites were stained with acetocarmine, dehydrated in an ascending series of isopropanol, cleared in methyl salicylate, rinsed in xylol, and mounted in Kleermount (Carolina Biological Supply Co., Burlington, North Carolina).

One sergeant major, *Abudefduf saxatilis* (Linnaeus) family Pomacentridae, and 1 smooth trunkfish, *Lactophrys triqueter* (Linnaeus) family Ostraciidae, lacked parasites.

The species of fish, their parasites, and the number examined and found are listed in Table 1.

Representatives of some of the species are deposited in the United States National Museum

(USNM) parasite collection, Beltsville, Maryland, and Harold W. Manter Laboratory (HWML), University of Nebraska, Lincoln, under the listed accession numbers.

Even though the present study is limited in scope, it indicates the presence of a rich parasitic fauna of marine fishes of Grand Cayman. Fifteen (88%) of 17 fishes, representing 9 (82%) of 11 host species, were infected. Of those infected, 2 host species (22%) harbored acanthocephalans and 7 (78%) had digeneans. The intensity of infection with acanthocephalans was 5 for *Acanthogyrus (Acanthosentis) acanthuri* and 54 for *Dollfusentis ctenorhynchus*. For digenetic trematodes, the intensity ranged from 1 to 25. The exact number for each species is given in Table 1.

No new species were found in this study, but all the parasites represent new locality records. *Acanthogyrus (Acanthosentis) acanthuri* was originally described from Puerto Rico and re-described by Schmidt (1975) from 8 specimens recovered from *Acanthurus coeruleus* (type host) and *A. chirugrus* from Tobago, West Indies. I agree with the revised description and measurements given by Schmidt (1975). Golvan (1959) had relegated *Acanthosentis* Verma and Datta, 1929, to subgeneric status, which, apparently, was not accepted by Schmidt (1975) but recognized by Amin (1985). The present finding is, therefore, the third for this species and extends its distribution to the northwestern part of the Caribbean. This is the second report of *Dollfusentis ctenorhynchus*, an acanthocephalan originally reported from Jamaica.

Two new hosts are reported in this paper: *Acanthurus bahianus* for *Monorchimacradena acanthuri* and *Holocentrus marianus* for *Helicometra equilata*. *Monorchimacradena acanthuri* is known from both Jamaica and Curaçao. *Helicometra equilata*, originally described from *Holocentrus ascensionis* in Tortugas, Florida, is probably widely distributed in the Caribbean, having been reported from Puerto Rico, Bimini,

Table 1. Parasites of marine fishes from Grand Cayman, Cayman Islands, British West Indies.

Host (number examined/number infected)	Parasite (number of parasites)	De- posited at:	Accession No.
<i>Acanthurus bahianus</i> Castelnau, 1855, ocean tang (1/1)	<i>Monorchimacradena acanthuri</i> Nahhas and Cable, 1964 (1), intestine		
<i>Acanthurus coeruleus</i> Block and Schneider, 1801, Blue tang 1/1	<i>Acanthogyrus (Acanthosentis) acanthuri</i> (Cable and Quick, 1954) Golvan, 1959 (5: 2 males, 3 females), intestine	HWML	35110
<i>Caranx bartholomaei</i> (Cuv. and Val., 1833) (1/1)	<i>Bucephalus varicus</i> Manter, 1940 (25), ceca	USNM HWML	82471 35109
<i>Chaetodon ocellatus</i> Bloch, 1787, common butterfly fish (4/1)	<i>Hurleytremaoides chaetodoni</i> (Manter, 1942) Yamaguti, 1950 (13), intestine	USNM	82472
	<i>H. curacaensis</i> Nahhas and Cable, 1964 (17), intestine	HWML	35207
	<i>H. curacaensis</i> Nahhas and Cable, 1964 (17), intestine	USNM	82473
	<i>Multitestis chaetodoni</i> Manter, 1947 (4), intestine	HWML	35208
<i>Chaetodon striatus</i> (Linn., 1758), banded butterfly fish (4/1)	<i>Multitestis chaetodoni</i> (4), intestine	USNM	82474
<i>Haemulon flavolineatum</i> (Desmarest, 1823), yellow grunt (1/1)	<i>Multitestis chaetodoni</i> (4), intestine	HWML	35209
<i>Haemulon sciurus</i> (Shaw, 1803) blue-striped grunt (1/1)	<i>Lecithophyllum pyriforme</i> (Linton, 1910) Yamaguti, 1958 (1), intestine		
<i>Holocentrus marianus</i> (Cuv. and Val., 1829), long-jaw squirrelfish (1/1)	<i>Stephanostomum sentum</i> (Linton, 1910) Manter, 1947 (1), intestine		
	<i>Podocotyle oscitans</i> (Linton, 1910) Yamaguti, 1971 (4), intestine		
<i>Holocentrus marianus</i> (Cuv. and Val., 1829), long-jaw squirrelfish (1/1)	<i>Helicometra equilata</i> (Manter, 1933) Siddiqi and Cable, 1960 (17), intestine	USNM HWML	82475 35210
<i>Mulloidichthys martinicus</i> (Cuv. and Val., 1829), yellow goatfish (1/1)	<i>Dollfusentis ctenorhynchus</i> (Cable and Linderroth, 1963) Golvan, 1969 (54: 28 females, 26 males), intestine	USNM HWML	82476 35111

and Jamaica. *Bucephalus varicus* has been recovered predominantly from carangid fishes of Grand Isle (Louisiana), Apalachee Bay, Tortugas, Tampa Bay, and Biscayne Bay; it is also known from Bimini, Curaçao, and Jamaica. It is of interest to note that this species has also been reported from Brazil, but neither Siddiqi and Cable (1960) nor Dyer et al. (1985, 1992) found it in Puerto Rican fishes. *Bucephalus varicus* has a worldwide distribution, having been reported from fishes in the Red Sea, the Philippines, and the Pacific and the Atlantic oceans. It is quite possible that these reports represent more than 1 species. Characteristic features of this species include 7 tentacles, which often are not protruded; instead, 7 "knob-like" structures may be counted on the anterior sucker. A slight pressure on live specimens may cause partial or complete protrusion of the tentacles. *Hurleytremaoides chaetodoni* is known from Tortugas, Puerto Rico, Curaçao, and Jamaica. *Hurleytremaoides curacaensis* described from *Chaetodon capistratus* and *C. ocellatus* from Curaçao was not found in Jamaica. This species may be distinguished from

*H. chaetodoni* chiefly by absence of eye-spot pigments and wider eggs with shorter filaments. Seventeen individuals were found in a mixed population with 13 *H. chaetodoni*. When several worms were being observed live, it was clear that 2 species were represented. *Multitestis chaetodoni* has been reported from Tortugas, Bermuda, the Atlantic coast of Panama, and Jamaica. *Lecithophyllum pyriforme* is widely distributed in the Gulf of Mexico, the Caribbean, adjacent waters, and as far south as Brazil. It has been reported from the Louisiana coast, Tortugas, Biscayne Bay, Puerto Rico, Jamaica, Curaçao, Bimini, and Brazil. *Stephanostomum sentum* is known from Apalachee Bay in the northern Gulf of Mexico, Tortugas, Biscayne Bay, Puerto Rico, Cuba, Jamaica, and Curaçao. It is also known from the Panamanian Pacific. *Podocotyle oscitans* is known from Tortugas, Biscayne Bay, Jamaica, Curaçao, and Puerto Rico. It is also known from the Galapagos Islands.

Although Grand Cayman lies well isolated in the Caribbean and separated from the nearest islands of Jamaica (southeast), Cuba (north and

northeast), Honduras, Guatemala, Belize, and the Yucatan Peninsula (west) by deep channels, many of its fishes are widely distributed along the shores and reefs of these lands and other Caribbean waters. This is undoubtedly true of their invertebrate fauna in general and the molluscs in particular. Extensive parasitological investigations of these areas will, in all likelihood, reveal an equally similar parasitic fauna.

When compared to the 2 closest islands of Jamaica and Cuba, Cayman's parasitic fauna is closely related to the former with 9 (81.8%) of 11 species common to both areas but only 1 species (9.1%) to Cuba. Pérez Vigueras' studies between 1940 and 1958 "described as new several (species) which were not adequately compared with known ones and probably are not distinct from them" (Nahhas and Cable, 1964, p. 217). Additional studies from Cuba are needed. Even though deep waters and great distances separate Grand Cayman from Curaçao, Puerto Rico, and Tortugas, a strong relationship of the parasite fauna of these fishes is evident: with Curaçao (7 or 63.6%) and Puerto Rico and Tortugas (6 each or 54.5%).

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